

Application No. 10/064,757
Attorney Docket No. 125691-3 (13591US03)

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Previously Presented) A method for obtaining cine angiography images in a computed tomography (CT) scanner, said method comprising:

positioning a patient at a first position in a CT scanner;

selecting independently configurable first and second triggering sequences, said triggering sequences each capable of associating two or more events, said events each capable of being independently configurable with respect to said patient;

scanning the patient during a first sweep beginning at said first triggering sequence;

moving the patient to a second position; and

scanning the patient in a second sweep beginning at said second triggering sequence;

forming a series of motion images based on at least said first sweep and said second sweep.

2. (Original) The method of claim 1 further comprising stopping said scanning after said first sweep.

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3. (Original) The method of claim 1, further comprising displaying said series of motion images.
4. (Previously Presented) The method of claim 1, wherein at least one of said events based on an occurrence within a cardiac cycle constitute an independently configurable percent completion of a cardiac R-wave.
5. (Previously Presented) The method of claim 1, wherein at least one of said events occurs an independently configurable time period after a reference point in time.
6. (Previously Presented) The method of claim 1, wherein said second triggering sequence occurs an independently configurable time period after said first triggering sequence.
7. (Previously Presented) The method of claim 1, wherein at least one of said events constitute a predetermined percentage of an interval between R-waves.
8. (Previously Presented) The method of claim 1, wherein at least one of said first triggering sequence and said second triggering sequence constitute a prospective triggering sequence.
9. (Previously Presented) The method of claim 1, wherein at least one of said events occurs at 40% completion of an interval between cardiac R-waves.
10. (Previously Presented) The method of claim 1, wherein at least one of said events occurs at 80% completion of an interval between cardiac R-waves.
11. (Original) The method of claim 1, wherein said series of motion images is formed from image data obtained over successive heartbeats.

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12. (Currently Amended) A system for obtaining cine angiography images in a computed tomography (CT) scanner, said system comprising:

an electron beam being initiated based on multiple independently configurable trigger sequences ~~a trigger sequence~~, said electron beam sweeping a target ring to produce x-rays for irradiating a patient;

a beam control system for controlling said electron beam to sweep said target ring to irradiate said patient in at least two CT scans, said beam control system capable of generating said trigger sequences, ~~said trigger sequence~~, said trigger sequences further comprising a plurality of independently configurable events;

a movable patient positioner for automatically positioning a patient between said target ring and a detector ring, said movable patient positioner moving said patient from a first position to a second position between or during said at least two CT scans;

a detector ring for detecting x-rays passing through said patient from said target ring; and

a data acquisition system for acquiring image data from said detector ring based on said x-rays during said at least two CT scans, said data acquisition system forming a series of motion images based on said image data.

13. (Original) The system of claim 12, further comprising a display for displaying said series of motion images.

14. (Original) The system of claim 12, further comprising multiple target rings.

15. (Original) The system of claim 12, further comprising multiple detector rings.

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16. (Original) The system of claim 12, wherein said patient positioner moves between sweeps of said electron beam.

17. (Original) The system of claim 12, further comprising an image reconstruction module for processing said image data to form said series of motion images based on said image data.

18. (Original) The system of claim 12, further comprising an ECG digitizer for generating said trigger based on a patient's cardiac cycle.

19. (Previously Presented) A method for generating a cine sequence of images depicting cardiac activity, said method comprising:

sweeping an energy beam over a target to generate radiation to irradiate a patient;

moving the patient as the energy beam sweeps over the target to generate

radiation, said radiation irradiating a plurality of portions of the patient's heart as the patient is moved;

coordinating said sweeping an energy beam and said moving the patient with at least two independently configurable trigger sequences;

detecting radiation attenuated by the patient;

converting the detected radiation to data signals, said data signals including cardiac information indicative of the patient;

generating a cine sequence of images using the data signals, said images depicting cardiac activity of the patient.

20. (Original) The method of claim 19, further comprising displaying said cine sequence of images.

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21. (Original) The method of claim 19, wherein the patient moves at a rate of three millimeters per second.
22. (Cancelled)
23. (Currently Amended) The method of claim 19, wherein said coordinating comprises triggering the energy beam at a predetermined point in a cardiac R-wave.
24. (Currently Amended) The method of claim 19, wherein said coordinating comprises triggering the energy beam after a predetermined time period after a reference point in time.
25. (Currently Amended) The method of claim 19, wherein said coordinating comprises triggering the energy beam at a predetermined point in an interval between cardiac R-waves.
26. (Original) The method of claim 19, wherein said data signals are obtained over successive heartbeats.
27. (Currently Amended) A method for obtaining a cine sequence of cardiac images, said method comprising:
- triggering an energy beam with at least one independently configurable trigger sequence during an interval between first and second cardiac R-wave peaks in a first sweep over a target ring to generate radiation to irradiate a patient;
- collecting a first set of image data signals from radiation attenuated by the patient;
- moving the patient from a first position to a second position;

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triggering the energy beam with at least one additional independently configurable trigger sequence to perform a second sweep over the target ring;
collecting a second set of image data signals from radiation passing from the target ring through the patient;
associating additional cardiac information indicative of the patient with said first and second sets of image data signals; and
generating a cine sequence of cardiac images from at least said first and second sets of image data signals and associated additional cardiac information.

28. (Original) The method of claim 27, wherein said moving step further comprises moving the patient from a first position to a second position after the first sweep.

29. (Original) The method of claim 27, wherein said moving step further comprises moving the patient from a first position to a second position during at least one of said first sweep and said second sweep.

30. (Previously Presented) The method of claim 1, wherein said independently configurable event occurs at the injection of contrast media into said patient.

31. (Previously Presented) The method of claim 30, wherein said contrast media is injected intravenously into said patient.

32. (Previously Presented) The method of claim 30, wherein said contrast media is a bolus contrast injection.

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33. (Previously Presented) The method of claim 1, wherein said independently configurable event occurs at a manual trigger.

34. (Previously Presented) The method of claim 1, wherein said independently configurable event occurs after said moving patient to a second position.

35. (Previously Presented) The method of claim 1, wherein said independently configurable event occurs after skipping an independently configurable number of heartbeats.